

## HST spectro-imaging of Saturn and search for water from the rings

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High spatial resolution FUV images of Saturn have been taken with the Faint Object Camera on board HST around 1800 and 2000 Å. The spectral ranges were selected to search for absorption features due to (a) water possibly precipitating from the rings, (b) endogenic species, such as hydrocarbons and phosphine, and (c) stratospheric aerosols. A series of FOS and GHRS spectra in the spectral range 1550-2350 Å were taken in association with the images. After coadding and mosaicing the individual exposures, FUV albedo maps are produced at both FUV wavelengths. They exhibit particular features, including the ring structure and the polar haze. The maps are rebinned in 1-D along constant latitude or local time axes to increase visibility of faint signatures. They are also spatially organized, and center-to-limb variations are interpreted using simple models. The wavelength dependence of the FUV albedo is also derived from the spectra, and significant spatial variations in the atmospheric absorption between 1600 and 1850 Å provide convincing evidence of precipitation of water from the rings along magnetic field lines. Variation in the atmospheric composition with latitude will also be derived from model fits to the spectra.

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